The Future of Electric Power in the South:
A Framework and Participatory Process for Evaluating Options

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This project will develop a framework and participatory process for engaging utilities, regulators, and other key stakeholders in a dialog about the future of electric power in the South. The framework will reflect the array of dynamic conditions (technologies, economics, and policies) that are influencing electric power decisions in the South. The framework will mirror an integrated resource planning (IRP) process where electric power supply and demand options are examined in the context of a range of plausible overarching power planning strategies evaluated in the context of possible future scenarios of economic growth, environmental regulations, and technological progress. The framework will be used to examine the role of distributed solar photovoltaics (PV) and combined heat and power (CHP) in the future of electric power in the South. Examining the roles of solar PV and CHP will "stress test" this framework and reveal whether improvements are needed. The goal is to develop a successful and replicable framework and process for evaluating a wide range of resource options faced by utilities in the South.

GT-DSM and GT-NEMS are two modeling tools that will be central to developing and testing this framework. GT-DSM has been developed in a participatory process involving stakeholders from numerous organizations in the South. GT-NEMS is the federal government's principal energy forecasting and modeling tool, and Georgia Tech is one of only a few organizations experienced with customizing it to reflect various policy, technology, and economic forecasts.

Collaboration with external stakeholders and communication with the public will be intensive throughout the course of the proposed project. Key stakeholders will be involved in the design and implementation of the project, including representatives of utilities, regulators, national laboratories, consulting firms, trade organizations, industry, and think tanks. The Georgia Tech team members will play the role of "honest brokers" involved in a pragmatic assessment of options alongside stakeholders; we will not be "advocates" of particular policies, technologies, or energy resources. White papers authored by GT faculty with students and outside experts, periodic workshops, frequent social and traditional media outreach, and peer reviewed publications will be part of this comprehensive effort to define and publicize Georgia Tech's position as thought leaders. If successful, Georgia Tech will be able to expand and continue this effort with external funding.

This project will fill gaps in public knowledge about the ability of solar PV and CHP to deliver energy, grid, and environmental services in the South. Currently, stakeholders take a wide range of positions on the value of these energy options. Some believe that utility business models are fundamentally threatened by increased deployment of solar PV and CHP systems, while others advocate the grid reliability, real-time marginal economic benefits, and environmental virtues of these options. This project's thorough investigation of these issues from multiple perspectives will provide knowledge for improved energy policy decisions at many scales of governance.